

V&V Summary Report

L2 ASCDS Version : 10.8

Observation 22602 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Sep 4 2019

See [axaff22602N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2019.09.05
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	29.06560022366

Comments

The focal plane temperature during the interval 683941048.78 - 683944375.08 (MET s) of this observation was warmer than the upper limit for optimum calibration of the ACIS gain and spectral resolution (i.e., -111.0 C for ACIS-S). The focal plane temperature during part of this observation was warmer than the upper limit for optimum calibration of the ACIS gain and spectral resolution (i.e., -111.0 C for ACIS-S). The Chandra calibration team calibrates the ACIS gain and spectral resolution using data from the external calibration source (ECS). ECS data show that the frontside-illuminated (FI) CCDs are more temperature-sensitive than the backside-illuminated (BI) CCDs. A summary of the current calibration status of the ACIS gain and spectral resolution can be found at:

http://asc.harvard.edu/cal/Acis/Cal_prods/Gain_and_Spectral_Resolution/A_CIS_response_summary

The main points are:

- 1) The gain on BI chips remains within 0.3% (i.e., the systematic uncertainty in the ACIS gain quoted on the Chandra Calibration Status Summary web page) at all measured temperatures.
- 2) The gain on FI chips remains within 0.3% below row 600 at all

measured temperatures.

3) The gain on FI chips above row 600 can be underestimated by as much as 1% for focal plane temperatures exceeding -116 C.

4) The spectral resolution (i.e., FWHM) on BI chips is insensitive to the focal plane temperature.

5) Warmer focal plane temperatures increase the FWHM on FI chips by up to 30 eV near row 512 and by up to 70 eV near the top of the chips.

In summary, the user should be cautious in the spectral analysis of high S/N emission lines detected on the top half of FI chips in this observation. Default processing with the current version of the CALDB will underestimate photon energies by up to 1% and broaden emission lines by up to 70 eV.

seq_num	703988	Sequence number
obs_id	22602	Observation id
title	Young Radio Sources at the Highest Redshift (Part 2)	Proposal titl
observer	Aneta Siemiginowska	Principal investigator
object	J2228+0110	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	337.18125	Observer's specified target RA [deg]
dec_targ	1.175528	Observer's specified target Dec [deg]
ra_nom	337.17989225717	Nominal RA [deg]
dec_nom	1.1696814691362	Nominal Dec [deg]
roll_nom	215.15659378915	Nominal Roll [deg]
revision	1	Processing version of data
ontime	29065.60022366	Sum of GTIs [s]
lifetime	28685.836758955	Lifetime [s]
ontime3	29062.45911324	Sum of GTIs [s]
ontime6	29059.31806314	Sum of GTIs [s]
ontime7	29065.60022366	Sum of GTIs [s]
ontime8	29065.60022366	Sum of GTIs [s]
l2events	183447	Number of level 2 events

